

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark  
Office  
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Crystal Plaza 2  
Washington, DC 20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 16 July 1998 (16.07.98)	
International application No. PCT/US97/23771	Applicant's or agent's file reference 6439/KL
International filing date (day/month/year) 23 December 1997 (23.12.97)	Priority date (day/month/year) 26 December 1996 (26.12.96)
Applicant WANG, Jiping et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
25 June 1998 (25.06.98)

☐ in a notice effecting later election filed with the International Bureau on:  
\_\_\_\_\_

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer S. Cruz
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification<sup>6</sup> : <b>C11D 3/22</b></p>	<p><b>A2</b></p>	<p>(11) International Publication Number: <b>WO 98/29528</b> (43) International Publication Date: 9 July 1998 (09.07.98)</p>
<p>(21) International Application Number: PCT/US97/23771 (22) International Filing Date: 23 December 1997 (23.12.97) (30) Priority Data: 60/033,930 26 December 1996 (26.12.96) US (71) Applicant (for all designated States except US): THE PROCTER &amp; GAMBLE COMPANY [US/US]; One Procter &amp; Gamble Plaza, Cincinnati, OH 45202 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): WANG, Jiping [CN/US]; 6546 Glenarbor Drive, West Chester, OH 45069 (US). WASHINGTON, Nodie, Monroe [US/US]; 1169 Brush Row Road, Wilberforce, OH 45384 (US). HUNTER, Kathleen, Brenner [US/US]; 2232 Amsterdam Road, Villa Hills, KY 41017 (US). BOYER, Stanton, Lane [US/US]; 12 Fall River Court, Fairfield, OH 45014 (US). (74) Agents: REED, T., David et al.; The Procter &amp; Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217 (US).</p>		<p>(81) Designated States: BR, CA, CN, JP, MX, NO, <u>US</u>, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>Without international search report and to be republished upon receipt of that report.</i></p>
<p>(54) Title: LAUNDRY DETERGENT COMPOSITIONS WITH CELLULOSIC POLYMERS TO PROVIDE APPEARANCE AND INTEGRITY BENEFITS TO FABRICS LAUNDERED THEREWITH</p>		
<p>(57) Abstract</p> <p>Disclosed are detergent compositions and methods which utilize certain modified cellulose ethers as fabric treatment agents that can impart fabric appearance and integrity benefits to fabrics and textiles laundered in washing solutions which contain such agents. Such modified cellulose ether fabric treatment agents are those having selected types and amounts of anhydroglucose ring substituents in order to render them nonionic, cationic or anionic in nature.</p>		

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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>C11D 3/22, 3/382 // 1/12, 1/29, 1/66</b>	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 98/29528</b> <b>(43) International Publication Date:</b> 9 July 1998 (09.07.98)
<b>(21) International Application Number:</b> PCT/US97/23771 <b>(22) International Filing Date:</b> 23 December 1997 (23.12.97)  <b>(30) Priority Data:</b> 60/033,930 26 December 1996 (26.12.96) US  <b>(71) Applicant (for all designated States except US):</b> THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> WANG, Jiping [CN/US]; 6546 Glenarbor Drive, West Chester, OH 45069 (US). WASHINGTON, Nodie, Monroe [US/US]; 1169 Brush Row Road, Wilberforce, OH 45384 (US). HUNTER, Kathleen, Brenner [US/US]; 2232 Amsterdam Road, Villa Hills, KY 41017 (US). BOYER, Stanton, Lane [US/US]; 12 Fall River Court, Fairfield, OH 45014 (US).  <b>(74) Agents:</b> REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217 (US).		<b>(81) Designated States:</b> BR, CA, CN, JP, MX, NO, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report.</i>  <b>(88) Date of publication of the international search report:</b> 17 September 1998 (17.09.98)
<b>(54) Title:</b> LAUNDRY DETERGENT COMPOSITIONS WITH CELLULOSIC POLYMERS  <b>(57) Abstract</b>  Disclosed are detergent compositions and methods which utilize certain modified cellulose ethers as fabric treatment agents that can impart fabric appearance and integrity benefits to fabrics and textiles laundered in washing solutions which contain such agents. Such modified cellulose ether fabric treatment agents are those having selected types and amounts of anhydroglucose ring substituents in order to render them nonionic, cationic or anionic in nature.		

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/23771

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C11D3/22 C11D3/382 //C11D1/12,C11D1/29,C11D1/66

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 634 481 A (PROCTER & GAMBLE) 18 January 1995 see page 10, line 20 - line 23 see examples A-D ---	1,2,7,8, 10
X	US 4 329 237 A (WIXON HAROLD E) 11 May 1982 see claims 1,25 see column 3, line 4 - line 9 ---	1,2,7,8, 10
X	US 3 950 276 A (GRAND PAUL SHELDON) 13 April 1976 see claims 1-5 see example 8 ---	1,2,7,8
X	EP 0 279 040 A (DEGUSSA) 24 August 1988 see claim 1 --- -/--	1,2,7

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

6 July 1998

Date of mailing of the international search report

15/07/1998

Name and mailing address of the ISA

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Authorized officer

Richards, M

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/23771

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 95 00614 A (KAO CORP ; SAKATA YUSHI (JP); TAMURA YUMIKO (JP); INOKOSHI JUNICHI) 5 January 1995 see claims 1-20 see page 24, line 11 - page 25, line 3 see table 2 ---	1,2,5,6, 9,10
P,A	WO 97 20020 A (UNILEVER NV ; UNILEVER PLC (GB)) 5 June 1997 see claims 1-9 ---	1,2,7,8
A	US 5 540 850 A (FOSTER FRANCIS G) 30 July 1996 see claims 1-3 -----	1,2

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 97/23771

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 97/23771

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3950276 A		FR 2150899 A	13-04-1973
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**Information on patent family members**

**Additional Application No**

PCT/US 97/23771

Form PCT/ISA/210 (patent family annex) (July 1992)

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## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>6439/KL</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 97/ 23771</b>	International filing date (day/month/year) <b>23/12/1997</b>	(Earliest) Priority Date (day/month/year) <b>26/12/1996</b>
Applicant <b>THE PROCTER &amp; GAMBLE COMPANY et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (see Box I).
2. ☐ Unity of invention is lacking (see Box II).
3. ☐ The international application contains disclosure of a **nucleotide and/or amino acid sequence listing** and the international search was carried out on the basis of the sequence listing
  - ☐ filed with the international application.
  - ☐ furnished by the applicant separately from the international application.
    - ☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
  - ☐ Transcribed by this Authority
4. With regard to the **title**,
  - ☐ the text is approved as submitted by the applicant
  - ☒ the text has been established by this Authority to read as follows:  
**LAUNDRY DETERGENT COMPOSITIONS WITH CELLULOSIC POLYMERS**
5. With regard to the **abstract**,
  - ☒ the text is approved as submitted by the applicant
  - ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.
6. The figure of the **drawings** to be published with the abstract is:
  - Figure No. --- ☐ as suggested by the applicant. ☐ None of the figures.
  - ☐ because the applicant failed to suggest a figure.
  - ☐ because this figure better characterizes the invention.

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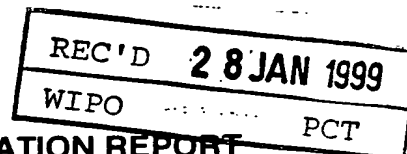


# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 6439/KL	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (PCT/IPEA/416)	
International application No. PCT/US97/23771	International filing date (day/month/year) 23/12/1997	Priority date (day/month/year) 26/12/1996
International Patent Classification (IPC) or national classification and IPC C11D3/22		
Applicant THE PROCTER & GAMBLE COMPANY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 9 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 25/06/1998	Date of completion of this report 26.01.99
Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer Culmann, J-C Telephone No. (+49-89) 2399-8487 

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**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US97/23771

**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

**Description, pages:**

1-23 as originally filed

**Claims, No.:**

1-10 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	2-10
	No:	Claims	1
Inventive step (IS)	Yes:	Claims	
	No:	Claims	2-10
Industrial applicability (IA)	Yes:	Claims	1-10
	No:	Claims	

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**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US97/23771

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**2. Citations and explanations**

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

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**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US97/23771

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability**

The following documents are referred to in this report:

- D1 WO-A-9 617 917
- D2 WO-A-9 500 614
- D3 US-A-4 329 237
- D4 US-A-5 540 850
- D5 Kirk-Othmer Encyclopedia of Chemical Technology, 5th. ed. (1993) vol. 5, pp 552-3

1. Document D1 discloses compositions (see compositions IV to VI on page 23) which all comprise:

- from 9.3 to 24% by weight of deterative surfactants;
- 0.14% by weight of EDTA (introduced as a preservative mixture);
- 0.1 to 0.35% by weight of Polysurf 67, which is one of the preferred hydrophobically modified nonionic cellulose used in the present invention.

It is also noted that compositions IV and V both comprise the cationic hydroxyethylcellulose JR-30M (respectively 0.2 and 0.8% by weight).

Therefore, the subject-matter of claim 1 lacks novelty. The subject-matter of the remaining claims is dependent on the subject-matter of claim 2, which is novel because of the amount of builder which must be from 10 to 50% by weight.

Thus, the subject-matter of claims 2 to 10 fulfils the requirements of Article 33(2) and (4)PCT.

2. The subject-matter of claims 2 to 10 does not amount to an inventive step.

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**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US97/23771

- 2.1. Document WO-A-9 500 614 (D2) relates to liquid softener compositions which can impart an excellent softness and antistatic properties to various fibres, and which comprise (A) a polyhydric alcohol ester, (B) a cationized cellulose, (C) a deterative surfactant. It is noted that Compositions 1, 3, 6-17, and Comparative Compositions 3, 7, 8 comprise all the features of claim 1 (since the cationic celluloses therein used are UCARE JR-125, JR-400 and JR-30M, also used in the present application), excepted the builder.

The problem faced by the Applicant is obviously solved by these compositions of the art. It seems that the purpose for which a builder is present in the claimed compositions is not directly related to said problem, but addresses the problem commonly encountered when a detergent-containing composition is used in hard waters. And that said builders act in their commonly known and expected way, providing the expected (even though not specified in the application) effects.

The Examiner thus concludes that the Applicant has merely introduced a builder in the specified amount to any of the above listed compositions of the art, in order to obtain the benefits usually observed from them, and the added builder being obviously not engaged in any unexpected relationship with the other components, its addition cannot be seen as involving an inventive step in the sense of Article 33(3) PCT.

The subject-matter of claims 2, 5, 6 and 9 is thus not inventive over D1.

- 2.2. Document US-A-4 329 237 (D3) relates to detergent-softener compositions capable of imparting improved softness, deterative effects, soil anti-redeposition and anti-static properties to fabrics treated therewith.

The composition of Examples 11, 19 (this is not an exhaustive list) comprise all the features of claim 1, excepted that the therein used carboxy methylcellulose is not further specified (no data about its molecular weight, degree of carboxy methyl substitution).

It is not readily determinable which contribution over the art results (if ever) from the selection of a carboxy methylcellulose as defined in item iii) of claim 1. While

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the Applicant has carried out comparative tests, the comparative composition he used is devoid of carboxy methylcellulose. He thus failed to establish that his compositions, wherein the CMC material is selected among the materials having a specific molecular weight and a specific degree of carboxy methyl substitution, do represent a contribution over the art disclosed in D2.

The Examiner thus concludes that the Applicant has merely narrowly defined the CMC that he found useful with the mere purpose to formally distinguish his compositions from those of the prior art. Better defining an otherwise commonly used compound cannot be seen as involving an inventive step in the sense of Article 33(3) PCT, and the subject-matter of claims 7, 8 and 10 lacks an inventive step.

- 2.3. Document US-A-5 540 850 (D4) relates to a detergent composition capable of softening natural fibre wash load articles without causing redeposition problems.

The main feature of these compositions is that they comprise a water-soluble nonionic substituted cellulose having an HLB of from 3.1 to 4.3 and a gel point of less than 58°C, with the proviso that said material substantially contains no hydroxyalkyl groups containing 4 or more carbon atoms. These compositions also preferably comprise surfactants and builders.

Since the compositions described in this citation all comprise hydrophobic celluloses (termed in the art EHEC) which are not substituted with a C<sub>8</sub>-C<sub>24</sub> alkyl group (termed in the art HMHEC for hydrophobically modified EHEC), novelty cannot be denied on the basis of this document.

But it must be noted that the hydrophobic celluloses used in the compositions according to this citation are not defined by the nature of the alkyl substituent of the modified cellulose, or are not exclusively EHEC; they are selected according to their HLB value and gel point, and considering the way according to which said HLB value is calculated (see the document, column 2), it is obvious that these modified celluloses are less hydrophilic than non-modified celluloses (the HLB of which would be 1.9x3 or 5.7). Or, in other words, the useful cellulosic materials are hydrophobic hydroxycelluloses.

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The useful celluloses identified in this citation include the Bermocoll (RTM) products from Berol Kemi AB.

It is however well known in the art that commercially available hydrophobic celluloses include not only the Bermocoll series, but also the Natrosol Plus series from Aqualon, see D5.

It thus seems that the Applicant has merely reproduced the teaching of this citation, and has used HMHEC rather than EHEC materials.

Since HMHEC materials are equivalent to the hydrophobic EHEC exemplified in D4, their substitution by commonly known equivalent cannot be seen as involving an inventive step, and the subject-matter of claims 2, 3, 4, 9 and 10 does not fulfil the requirements of Article 33(3) PCT.

- 2.4. As said previously, the tests carried out by the Applicant are devoid of real significance, because the comparative composition is devoid of any soil anti-redeposition compound. It is thus not surprising that his formulations achieve better results.

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**VII. Certain defects in the international application.**

The requirements of Rule 5.1 a) ii) PCT are not met, the documents D1 to D4 are not identified in the description and the relevant background art disclosed therein is not briefly discussed.

The terms "Polysurf" and "Natrosol" (see on page 7, the second paragraph); "Ucare" (see on page 8, the second paragraph); "Oxone" (see on page 10, the second paragraph) seem to be registered trade marks, but are not acknowledged as such.

The units of weight/measure "gallon" and "grain" employed on page 19 are not additionally expressed in terms of the units stipulated by Rule 10.1(a) PCT.

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**VIII. Certain observations on the international application.**

As useful cellulosic polymers preferably used in the present invention are specified LK-400, CMC D72, and Modified LK-400. These materials are described on page 18 of the description. All these materials have an "Amount of Ring Alkyl Substitution" of 0. They are amid the preferred cationic and anionic materials and are listed as such in the claims. But the cationic and anionic materials useful in the invention must have some alkyl substitution of the anhydroglucose rings, from 0.1 to 5%, see claim 1, item C), ii) and iii).

LK-400, CMC D72, and Modified LK-400, do not fall within the cellulosic polymers used in the present invention, though they are recited in the dependent claims. Thus, the claims are definitely unclear.

Furthermore, these materials being not within the scope of the invention, it cast doubts onto the contribution made by the present invention over the art (notwithstanding the shortcomings of the comparative tests).

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The term "generally" on page 6, line 4 of the penultimate paragraph, suggests that the amount of cellulosic polymer may be different from that specified in the claims; it thus induces unclarity as to the exact definition of the invention.

On page 15, the paragraph "G) Fabric Conditioning" relates to the use of the modified cellulose ethers alone, not compulsory as a component of the claimed compositions. It possibly leads the reader to the belief that such a use is encompassed by the invention.

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In claim 1, C) iii), the substituent "R" is "optionally" a long alkyl chain; since an alkyl substitution degree of 0.1 to 5% is required, said long alkyl chain substituent can no longer be optional.

In claim 2, the amount of builder is not supported by the description.

Claims 3, 4, 7 comprise preferred features of the invention; however, the combination of these features as such is not found in the description.

The trade names used in claims 4, 6 and 8 have no well-recognised meaning and leave the reader in doubt as to the meaning of the technical features to which they refer, thereby rendering the definition of the subject-matter of said claims unclear.

In claim 9, item a) I), the alkyl chain length of 10 to 22 carbon atoms is not supported by the description (8 to 18 carbon atoms, see on page 4, line 20). Item iv) is not adequately supported by the description.

"Sodium silicate" (see item b) of claim 10) is not so broadly defined in the description.

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